REMARKS

The Official Action of June 10, 2003, and the prior art cited and applied therein have been carefully studied. The claims in the application are now claims 1-10 and 17-26, and these claims define patentable subject matter warranting their allowance. Accordingly, the applicants respectfully request favorable reconsideration and allowance.

Applicants' title has been criticized as being not descriptive of the invention. Accordingly, a new title is presented above, and its approval and entry are respectfully requested.

The typographical error helpfully pointed out by the examiner on page 8, line 9 of the specification has now been corrected above.

Claim 1 has been rejected under the second paragraph of §112. There is no stated rejection of claims 2 and 5, but recitations appearing in these claims have also been criticized. The rejection is respectfully traversed.

As to claim 1 the rejection states that introducing "passive components" is not claimed. However, this is not correct because the claims recite (see the last part of claim 1) ejecting impedance material onto the platform at different

times and locations. It is of course fundamental that "impedance" elements include resistors, inductors and capacitors. As stated in applicants' specification, these are "passive components". Thus, please see page 4, the sentence commencing at line 12, and especially lines 15 and 16, as follows:

> The structure of each circuit layer 20... [comprises] an electrically insulative substrate 21, electric circuits 22..., **and passive components 23 (including resistors, inductors, or capacitors)**.... (emphasis added)

Also see the sentence at lines 22 and 23 on page 8 of applicants' specification. Therefore, claim 1 in its original form is correct and needs no amendments because the introduction of passive components is claimed.

As regards claim 2, applicants agree that there is no **exact** antecedent basis for "component circuits". However, even though such exact antecedent basis does not exist, claim 2 is not unclear, because the component circuits are clear and antecedent basis need not be exact, noting MPEP 2173.05(e).

Lastly, with respect to claim 5, "engineering plastics" are well known, and the term is well understood by those skilled in the art. Please see the attachments. Claim 5 recites that such an engineering plastic is delivered in its fluid state, and applicants believe that claim 5 in its

original form would be well understood by those skilled in the art, and is therefore not indefinite.

Accordingly, applicants believe that the claims as originally drafted, particularly considered in light of applicants' specification (fully consistent with the law), would not have been confusing to those skilled in the art, and therefore the claims in their precious form are fully in accordance with §112. At **worst**, the criticized claims in their previous forms might be considered objectionable, but **only** as to form.

Nevertheless, in deference to the examiner's views and to minimize needless argument, a number of cosmetic amendments have been made. In particular, claim 1 has been amended to largely remove the term "passive" (and a new set of parallel claims 17-26 have been added using the term "impedance components"); and claims 2 and 5 have also been cosmetically amended.

All these amendments are of a formal nature only, i.e. made to place the claims in better form consistent with the examiner's understanding of what is necessary or desirable under U.S. practice. The amendments are not "narrowing" amendments because the scope of the claims has not been reduced. No limitations have been added and none are intended; the meaning of the claims remains the same.

Applicants respectfully request withdrawal of the rejection.

Claims 1-10 have been rejected as obvious under §103 from applicants' alleged "admitted state of the art" (hereinafter simply AASA) in view of either Purcell et al USP 6,322,854 (Purcell) or Cavallaro USP 6,224,671 (Cavallaro). These two rejections are respectfully traversed.

AASA is taken out of context. The person having ordinary skill in the art does not look atan integrated process constituting a series of operations which are related to one another, and indeed dependent on one another, and decide that some of these interrelated operations can be used and others discarded or disregarded. The middle paragraph on page 1 of applicants' specification sets forth such an integrated prior art process which includes:

> designing the circuit layout in a computer,
>
> converting the circuit layout into a Gerber file,
>
> making a negative film subject to the Gerber file,
>
> developing the circuit layout on a copper foil bonded glass fiber plate,
>
> processing the copper foil bonded glass fiber plate into a finished circuit board through a series of additional steps.

The person of ordinary skill in the art does not look at such an integrated operation and decide, well, lets use the first

two operations, i.e. designing and converting to a Gerber file, and then not take any of the other steps such as making negative film subject to the Gerber file. To do so would make no sense at all.

Both secondary references simply relate to apparatus including multi-head dispensers, but have nothing to do with the formation of a laminated circuit as claimed. They do not disclose any method steps for the formation of a laminated circuit. Merely providing the tools by which one (if he or she were sufficiently inventive) could use such tools to make a printed circuit, let alone come up with applicants' method with or without knowledge of the AASA method, does not make the method obvious.

Applicants respectfully rely on *Ex parte Levengood*, 28 USPQ2d 1300, 1301-1302:

> The examiner notes that each reference discloses a different aspect of the claimed process. The examiner also notes that all aspects were "well known in the art". The examiner then indicates that because the carious aspects of the claimed process were individually known in the art, the modifications of the electrophoretic process of Levengood by exposing Levengood's plant materials to cell-associated materials in order to "graft" or otherwise incorporate the cell associated material into the plants was **"well within the ordinary skill of the art"** at the time the claimed invention was made.

> We reverse the rejection because the examiner has used the wrong standard of obviousness. (emphasis in original)

Similar to *Levengood*, the rejection in the present invention seems to be based in part on the idea that it is proper to combine diverse elements from different references merely because it is possible to do so, but that is not the correct standard.

> In order to establish a *prima facie* case of obviousness, it is necessary for the examiner to present **evidence** [footnote, including cited cases, omitted], preferably in the form of some teaching, suggestion, incentive or inference in the applied prior art, or in the form of generally available knowledge, that one have ordinary skill in the art **would have been led** to combine the relevant teachings of the applied references in the proposed manner to arrive at the claimed invention. See, for example, *Carella v. Starlight Archery*, 804 F.2d 135, 231 USPQ 644 (Fed. Cir. 1986); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985). (emphasis in original)

In the present case, as in *Levengood*, the prior art would not have led the person of ordinary skill in the art to applicants' invention.

> In this case [Levengood],... , the only suggestion for the examiner's combination of the isolated teachings of the applied references improperly stems from appellant's disclosure and not from the applied prior art. *In re Ehrreich*, 590 F.2d 902, 200 USPQ 504 (CCPA 1979). At best the examiner's comments regarding obviousness amount to an assertion that one of ordinary skill in the relevant art **would have been able to arrive**

> **at appellant's invention because he has the necessary skills to carry out the requisite process steps. This is an inappropriate standard for obviousness.** See *Orthokinetics Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986). **That which is within the capabilities of one skilled in the art is not synonymous with obviousness.** *Ex parte Gerlach*, 212 USPQ 471 (BD. App. 1980). See also footnote 16 of *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 1092, 227 USPQ 337, 343 (Fed. Cir 1985). (emphasis added)

As indicated above, the secondary references show at most only multi-head dispensers, but otherwise nothing related to the present invention. As the Board stated in *Levengood*, as quoted above, merely having skill and equipment is not sufficient. "That which is within the capabilities of one skilled in the art is not synonymous with obviousness."

> Our reviewing courts have often advised the Patent and Trademark Office that it can satisfy the burden of establishing a *prima facie* case of obviousness only by showing some objective teaching in either the prior art, or knowledge generally available to one of ordinary skill in the art, that "would lead" that individual "to combine the relevant teachings of the reference." *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989). Accordingly, an examiner cannot establish obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled ion the art to do what the patent applicant has done.

Indeed, the PTO's case for *prima facie* obviousness of the present invention is even weaker than was the case of the PTO in *Levengood*. Not only is there nothing in the prior art which "would lead" the person of ordinary skill in the art to combine the "references" as proposed, but also such a combination (even if obvious, strongly denied by applicants) would not result in what is claimed. The mere availability of multi-head dispensers does not teach one of ordinary skill in the art what to spray and where to spray it, and that information also is not provided by AASA, it being noted that the rejection agrees that AASA "fails to teach forming the circuitry by a spraying/dispensing apparatus which is controlled by the computer data file to dispense coating material onto the substrate."

Withdrawal of the rejection is in order and is respectfully requested.

Applicants must traverse the rejection additionally to the extent it relies on some alleged "obvious design choice". Applicants respectfully quote from *Ex parte Haas et al*, 144 USPQ 98, 99:

> The examiner... says that these [features of the claimed invention not shown by the reference] are a matter of choice. It is not a matter of choice presented by the prior art. The prior art gives only one choice [not applicant's choice]; .... Thus, one of ordinary skill in the art, turning to

> the prior art to make his choice, would never arrive at the claimed process. (bracketed material added)

Also see *Ex parte Deere*, 118 USPQ 541, 544; *Ex parte Krantz*, 61 USPQ 238; and *Ex parte Kaiser*, 194 USPQ 47, 48. Moreover, MPEP 2143.03 makes clear that all claim recitations must be taught or suggested by the prior art, citing *In re Royka*, 180 USPQ 580 (CCPA 1974). The materials used are crucial. Applicants do not see that the materials dispersed are "taught or suggested" by the prior art.

Applicants respectfully request favorable reconsideration and allowance.

Respectfully submitted,

BROWDY AND NEIMARK, P.L.L.C.
Attorneys for Applicants

By _____
Sheridan Neimark
Registration No. 20,520

SN:jaa
Telephone No.: (202) 628-5197
Facsimile No.: (202) 737-3528
G:\BN\D\dire\Peng4\PTO\amd 9oc03.doc

GE Plastics

Select Your Language

- LEXAN Resin Introduction Timeline
- LEXAN Resin Features Benefits
- Who Uses LEXAN Resin?
- LEXAN Resin Branding Program
- LEXAN Resin 50th Anniversary
- LEXAN Resin Promotion
- GE Plastics Press Room

LEXAN resin is the world's foremost engineering thermoplastic. One of the toughest and most versatile polymers, its unique combination of features is used to add high quality and high performance to thousands of products.

The LEXAN brand is also a strong signal of quality that can help consumers recognize products that enhance the way we live, work and play.

Come see why GE Plastics is leading the world in materials, technology and customer support. And, if you are interested in purchasing GE Plastics resin, GE Polymerland is your one-stop resource.

It's no ordinary plastic!

imagination at work

GE Plastics Home | GE Polymerland Home | GE Home | Contact Us

CoorsTek

Amazing Solutions.

Your source for solutions to the toughest materials problems

Semiconductor Products
Medical Products
Advanced Materials
Capabilities & Services
Contact CoorsTek
CoorsTek Home

CoorsTek = High Performance + High Purity-Plastic Parts

The best engineering materials solutions...

In the least amount of time...

At the lowest possible price...

Let **CoorsTek** take your engineering plastics project from concept to commercialized in the least amount of time at the lowest possible price with legendary service.

CoorsTek, Inc.
16000 Table Mountain Parkway
Golden, CO 80403-1640

303.277.4116 Tel
303.277.4533 Fax

plasticsales@coorstek.com
www.coorstek.com

TECHNOLOGY
MATERIALS
MANUFACTURING
ASSEMBLY

CoorsTek
Amazing Solutions.

Your source for solutions to the toughest materials problems

Advanced Materials for Amazing Performance

Engineering Plastics

From engineering design to QSR Compliant manufacturing of finished devices, CoorsTek is ready to serve your needs.

CoorsTek offers over 18,000 high-purity and superior-performance plastic materials to ensure optimal results for your next project. They include:

High Temperature Polymers	Thermoplastics	Fluoropolymers	Bioresorbables
■ PEEK	■ TPE	■ PFA	■ PGA
■ PEKK	■ TPO	■ FEP	■ LPLA
■ Polyimide (TPI)	■ PVC	■ ETFE	■ DLPLA
■ Polytherimide (PEI)	■ PC	■ ECTFE	■ DLPLA Blends
■ Polyethersulfone (PES)	■ PP	■ THV	
■ Liquid crystal Polymer (LCP)			

Please contact **CoorsTek** for additional information and prices.

Back

CoorsTek, Inc.
16000 Table Mountain Parkway
Golden, CO 80403-1640

303.277.4116 Tel
303.277.4533 Fax

plasticsales@coorstek.com
www.coorstek.com

Technology
Materials
Manufacturing
Assembly

CoorsTek
Amazing Solutions.

Your source for solutions to the toughest materials problems

CoorsTek Advanc d Materials Guide

Advanced materials seem very expensive. However, they are frequently the low cost alternative to achieving your design goals. They make machines faster, lighter, smaller, longer lasting, more reliable, and high performing. Semiconductor manufacturing uses of advanced materials dramatically increases yields and reduces cycle times providing exceptional cost-of-ownership characteristics. In the minimally invasive surgical device market, advanced materials make your devices more versatile, smaller, and more reliable. Check out the links below for detailed engineering design considerations.

All of the polymers used by CoorsTek have continuous use temperatures in excess of 350° F. The CoorsTek fluoropolymer materials are high purity plastics with the best chemical resistance of all thermoplastic materials on the planet. Other CoorsTek materials are polymers with excellent thermo-mechanical performance and purity.

BioPEKK™ IG/MG Neat	BioPEKK™ IG/MG CF
PEKK CE-300	PEEK 151 G
PEEK 150CA30	PEEK 150GL30
TPI 450	TPI JCN6230
PAI 2403	PAI 7130
PAI 5030	PFA 440 HP
FEP 100	ETFE 207
PVDF 320	PCTFE 300
PES A-100	PES AG-230
P1700 Udel	LCP A130
LCP A230	Download .pdf of all materials

BioPEKK is a registered trademark of CoorsTek
Note: Engineering data is representative. Property values vary somewhat with method of manufacture, size, and shape of part. This data is not to be construed as absolute and does not construe a warranty for which we assume legal responsibility.

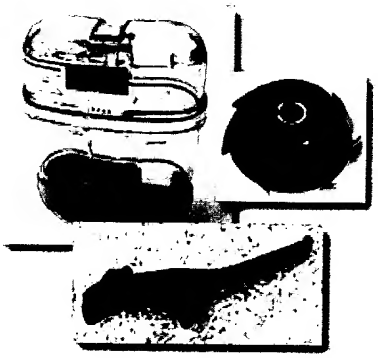
Back

NMC NON-METALLIC COMPONENTS, INC.
Innovations in Injection Molding
ISO 9002 and QS9000 Registered

Specialty Resins

Demanding injection molding projects often require the use of challenging raw materials. NMC's engineers excel in meeting this challenge.

A wide variety of resins are processed in our facilities, from basic nylons, acetals, abs, pp, pe, ppo, polyesters, pvc, pc, and acrylics to specialized engineering grade thermoplastics.



Engineering grade specialty resins
NMC has vast experience in molding today's most sophisticated specialty resins including:

- **Amodel®**
- **Ryton®**
- **Celstran®**
- **Verton®**
- **Rigid and flexible PVC**
- **Kevlar®**
- **Long fiber materials** with up to ½" long glass at up to 60% concentrations
- **Clear grades** of polycarbonate, pvc, styrene, acrylic, polyester and nylon

About Us
Injection Molding
Specialty Resins
Secondary Processes
Filters
Capabilities
Costs
FAQ
Industry Resources

Quick Menu
Request a Quote
Send a File
Request Samples
Specialty Resins
Secondary Process

Need help selecting a material for your application?
If you need assistance in selecting a grade of material, we will consult with various material representatives to determine what the best resin is for a particular application. Factors to be considered include, thermal requirements, mechanical properties, chemical resistance, UL rating, NSF/FDA approvals, UV stability, cost and availability.

Please contact Matt Mergener by phone at 608-635-7366 or email at mmergener@nonmetallic.com for more information. You may also request and NMC project quotation online by clicking here.

Plastic Injection Molding | Injection Molding Case Studies | Injection Molding Engineering
Molded Plastic Filters | Filter Case Studies | Spotlight On Filters
Specialty Resins | Secondary Processes | Injection Molding Quote Request
File Transfer Center | Contact Non-Metallic Components | Injection Molding Resources
Site Map

Non-Metallic Components
650 Northern Court
Poynette, Wisconsin 53955